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# FIELD CROP VARIETY PLOTS

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*A Typical Field Crop Variety Plot*

## VARIETY DESCRIPTIONS

WHEAT — OATS — BARLEY

FLAX — FORAGE CROPS

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## FIELD CROP VARIETY PLOTS ARE VALUABLE

Most farmers like to keep up-to-date on new varieties — and many new varieties are appearing each year. Field Crop Variety Plots, maintained by grain buyers of the Line Elevator Companies, are valuable because they demonstrate the qualities of new varieties under local climatic and soil conditions. To serve its purpose most effectively, however, the plot should be situated along a main highway, and should be prominently marked. Posters for this purpose are supplied. It is also an advantage if the plot is located close to the elevator where the grain buyer can visit it with local farmers.

Properly located and cared for, Field Crop Variety Plots serve a most important function in keeping grain buyers and farmers up-to-date on the newer developments in our rapidly changing agriculture.

## GRAIN BUYERS DO EXCELLENT WORK

Seeding and caring for a grain plot entails a considerable amount of work. The maximum value of a plot, however, can only be obtained if it is properly seeded, and carefully weeded. It is obvious, of course, that more people will visit a well-cared-for plot than a neglected one. Generally speaking, over the years, Line Elevator Agents have done an excellent job of looking after their plots. Through their efforts they have brought credit to themselves, their Company, and to the community they serve.

## PLOTS USEFUL TO MANY

Farmers and others in the community can derive a great deal of interest and information on field crop varieties from periodic visits to the plots during the growing season. In this way, the relative dates of maturity and growth habits of the various crop varieties can be observed. Great benefits can also be obtained if a Field Day is held at the plot. However, to be successful the Field Day must be well organized, and widely publicized. If at all possible a qualified crop specialist should be present to discuss the different varieties and answer questions.

Agricultural Representatives and other officials of the Provincial and Canada Departments of Agriculture are cordially invited to make full use of the plots both in extension work, and in insect and disease surveys. Furthermore, the plots can, and should, serve as a valuable source of study material for High Schools, 4-H Clubs and Agricultural Short Courses and Fairs.

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# *Description of Varieties*

The following brief descriptions of the varieties included in our Field Crop Variety Plots may be found useful in answering questions.

## **RED SPRING WHEAT VARIETIES**

### **MARQUIS**

Marquis resulted from a cross between hard Red Calcutta x Red Fife in 1892. It was selected and produced by Sir Chas. E. Saunders, Dominion Experimental Farm, Ottawa. Marquis was distributed from Indian Head in 1907, and for many years has been the standard of milling and baking quality.

Its average maturity is 109 days. The straw is of medium length and strong. Marquis has no resistance to stem or leaf rust, bunt, loose smut, takeall root rot, browning root rot or ergot. It has some resistance to common root rot.

### **THATCHER**

Thatcher resulted from crossing (Marquis x Iumillo) x (Marquis x Kanred) in 1921, at the University of Minnesota. It was first distributed in Western Canada in 1935. It is now by far the most widely grown wheat variety in Saskatchewan and Alberta.

Thatcher is a high yielding variety with wide adaptability, maturing 4 days earlier than Marquis. It has high milling and baking quality. Thatcher is resistant to lodging, highly resistant to shattering, and has some resistance to spring frost damage. The kernels are small, have a tendency to bleach, and may be low in bushel weight under dry conditions. Thatcher is resistant to stem rust excepting Race 15B. It is resistant to loose smut, but susceptible to leaf rust and bunt.

### **REDMAN**

This variety resulted from a cross Regent x Canus in 1934, by the Dominion Laboratory of Cereal Breeding, Winnipeg. It was first distributed in 1947. Redman was the leading wheat variety grown in Manitoba in 1953.

Redman is slightly earlier in maturity than Thatcher and has larger kernels with less tendency to bleach. It has straw of equal length and strength, equal resistance to shattering, and higher bushel weight. Redman is moderately susceptible to spring frost damage, resistant to bunt, moderately resistant to loose smut, moderately susceptible to common root rot and susceptible to leaf rust. It is resistant to stem rust excepting Race 15B.

### **CHINOOK**

Chinook was developed from the cross Thatcher x S-615 in 1938, at the Swift Current Experimental Station. Chinook is a solid stemmed, sawfly-resistant variety. It has taller, weaker straw than Thatcher, less resistance to shattering but has higher bushel weight.



It is equal to Thatcher in maturity and has larger kernels with less tendency to bleach. Chinook is susceptible to spring frost damage, moderately susceptible to common root rot and susceptible to bunt, loose smut and leaf rust. Compared with Rescue, the original sawfly-resistant wheat, Chinook is taller and earlier, has higher bushel weight and is superior in quality. Chinook qualifies for all top grades.

#### **SELKIRK**

The result of a cross between (McMurachy-Exchange) x Redman<sup>3</sup>. It is a Redman-type variety which is resistant to Race 15B of stem rust. It has straw of equal length and strength to Thatcher but is slightly less resistant to shattering. Selkirk has good bushel weight. It is equal to Thatcher in maturity, and has larger kernels with less tendency to bleach. Selkirk is resistant to bunt and loose smut and moderately resistant to leaf rust. Owing to its resistance to Race 15B of stem rust, Selkirk will, no doubt, be most extensively grown in southern Manitoba and southeastern Saskatchewan — the "rust area" of Western Canada.

#### **LEE**

Lee was developed at the University of Minnesota by crossing Hope x Timstein in 1939. It was first distributed in 1951. Lee is highly resistant to leaf rust. It has shorter, slightly weaker straw than Thatcher and is slightly later in maturity. Its resistance to shattering and its bushel weight are equal to Thatcher, however, its kernels are larger and have less tendency to bleach. Lee is a bearded variety which is moderately susceptible to spring frost damage, moderately resistant to common root rot but susceptible to bunt and loose smut.

#### **LAKE**

This variety was developed from the cross Regent x Canus made at the Experimental Station, Scott, Saskatchewan. It has recently been licensed in Canada.

Lake is later than Thatcher, but has stronger straw and produces larger kernels than Thatcher with less tendency to bleach. Lake possesses a great deal of drought resistance. In quality Lake is equal to Marquis. It is also fairly resistant to bunt, but is not very resistant to loose smut or to root rot. Lake is susceptible to Race 15B of stem rust and also to leaf rust. It is suitable for growing in the drier areas of Saskatchewan and Alberta.

#### **RESCUE**

Rescue originated from the cross Apex x S-615 (a New Zealand variety) made at the Central Experimental Farm, Ottawa, in 1938. Succeeding generations were grown at the Experimental Farm at Swift Current. Rescue was licensed in 1946 and accepted for registration in 1950.

Rescue is a sawfly resistant variety of medium early maturity. Under most conditions it produces solid stems. The kernels are large with good bushel weight. Rescue is inferior in quality to Marquis and is not eligible for grades above 3 Manitoba Northern. It is only fair in resistance to lodging and shattering. Rescue has considerable resistance to the common forms of stem rust but is susceptible to 15B.

It is also susceptible to leaf rust, loose smut and bunt, but has moderate resistance to root rot and black chaff. Rescue is suited to areas where wheat stem sawfly is a serious pest.

#### **SAUNDERS**

This variety was developed by the Cereal Division, Central Experimental Farm, Ottawa. It was licensed in 1947 and first distributed to farmers in Western Canada in 1948.

This variety is slightly earlier than Thatcher. However, except in the Peace River area it does not usually yield as well as Thatcher. Saunders is quite resistant to lodging, and does not shatter readily. It is resistant to loose smut, but only fairly resistant to bunt. Saunders is susceptible to Race 15B of stem rust, and has little resistance to leaf rust. Because of its earliness this variety does well in the northern areas of the Prairie Provinces. Saunders has good milling and baking qualities.

### **DURUM WHEAT VARIETIES**

#### **STEWART**

Stewart was developed by the North Dakota State Experiment Station from the cross (Mindum x Vernal) x Mindum. It was first distributed in 1946.

Stewart has good macaroni quality and is eligible for the top durum grades. It has long, medium strong straw and is resistant to leaf rust and to many races of stem rust. Stewart is, however, susceptible to Race 15B of stem rust. It is susceptible to bunt and moderately susceptible to kernel smudge (Black Point) and common root rot.

#### **PELISSIER**

This variety was introduced to Canada from the United States. The stock now grown in Western Canada arose from a selection made at the University of Saskatchewan as early as 1921. Pelissier was licensed for sale in Canada in 1929.

Pelissier is medium late. It has medium-long and fairly strong straw. Pelissier usually outyields Mindum and Stewart in the drier areas of Saskatchewan. However, Pelissier is inferior in quality to Mindum and is not eligible for grades above 3 C.W. Amber Durum. It is fairly resistant to leaf rust, but susceptible to bunt, loose smut, root rot and to most common races of stem rust including Race 15B.

#### **RAMSEY**

This variety was developed at the North Dakota Experiment Station from a cross between Carleton and a durum wheat introduced from Palestine. It was first distributed to farmers in 1957.

Ramsey has good macaroni quality and is eligible for the top durum grades. In maturity it is similar to Stewart. It has short, fairly strong straw. Ramsey is resistant to Race 15B of stem rust and therefore is a variety to be grown in the durum areas of the Prairie Provinces, where stem rust damage is likely to occur.

## OAT VARIETIES

### VICTORY

Victory resulted from a Swedish selection out of Milton and was first introduced in 1911. It is a late, plump-seeded variety which yields well where rust is not a factor. It has slightly weak straw of good length. Victory has no resistance to smuts or rusts.

### RODNEY

Rodney was developed at the Dominion Laboratory of Cereal Breeding, Winnipeg, in 1943 from a cross of (Victoria - R.L.524 x Victory - Hajira) x Roxton. It was first distributed in 1954.

Rodney is a high yielding, medium late-maturing variety with medium tall, strong straw. It has large white kernels with a thin hull and has very high bushel weight. Due to its thin hull and large kernel, Rodney tends to dehull readily during threshing. It is resistant to smut, to most races of stem rust, to Victoria blight, and moderately resistant to crown rust.

### EXETER

This variety was developed from the cross Victory x Rusota made in 1929 at the Dominion Laboratory of Cereal Breeding, Winnipeg, Manitoba.

Exeter has approximately the same maturity, straw qualities and kernel type as the Victory parent, but has moderate resistance to stem rust. It is susceptible to crown rust, partially resistant to smut and resistant to Victoria blight. Exeter, being a medium late variety, is adapted chiefly to the later oat growing sections of the stem rust areas of the West.

### AJAX

Ajax was developed at the Dominion Laboratory of Cereal Breeding, Winnipeg, from a cross Victory x Hajira in 1930. It was first distributed in 1943. It is earlier maturing than Exeter with about the same yielding ability. It is similar to Exeter in height, strength of straw and in stem rust resistance. It has moderate resistance to crown rust and the smuts. Its kernel is slightly smaller, but it equals Exeter in bushel weight.

### GARRY (New)

Victory x (Victoria x 'Hajira - Banner'). The original Garry variety was developed at the Dominion Laboratory of Cereal Breeding, Winnipeg in 1939. The new Garry is a Victoria blight resistant selection from the original Garry which was distributed in 1947. Garry matures 2 to 3 days earlier than Exeter. It has fairly strong straw, and a large plump kernel. It is resistant to smut, stem rust, Victoria blight, and moderately resistant to crown rust. Garry is eligible for the top grades. It is fairly widely adapted.

### VICAR

Vicar is the result of a single plant selection from the original variety of Garry oats. It was purified and increased at the Laboratory of Cereal Breeding, Winnipeg. It was licensed in 1957. Vicar is a late-maturing, hullless variety of oats. It has tall, strong straw. Vicar has greater resistance to stem rust and crown rust

than Torch or other hullless oat varieties, and is moderately resistant to smut and Victoria blight. Vicar is, however, very susceptible to "blast". Owing to its greater resistance to rust and smut, higher yield, and higher bushel weight, Vicar is considered a promising addition to the hullless varieties of oats.

#### **TORCH**

Torch was produced at the University of Saskatchewan from a cross Nakota x (Hajira x Joannette). It is a white-seeded, mid-late, hullless variety with strong straw of medium length. It is resistant to loose and covered smut, stem rust and Victoria blight, but susceptible to crown rust. It is moderately resistant to shattering and has a very good bushel weight — usually over 45 lbs. per bushel.

#### **LARAIN**

Larain was developed at the Cereal Division, Central Experimental Farm, Ottawa from a cross between Alaska and Gold Rain. Final selection and development of this variety was made at the Experimental Station, Lacombe, Alberta. It was first distributed in 1945. Larain is an early maturing variety with medium tall, strong straw. It has a large white kernel and heavy bushel weight. It is resistant to Victoria blight but susceptible to both stem rust and crown rust and to smut. Larain is grown chiefly in Alberta in areas where early fall frost may be a hazard. It is useful where delayed seeding is practised for wild oat control.

#### **EAGLE**

Eagle was developed from a cross between Victory and Von Lochow's Yellow made in Sweden. It was licensed in Canada in 1937.

Eagle is a medium early variety with fairly strong straw of medium length. The kernels are of medium size. It is fairly resistant to lodging. Eagle is susceptible to most races of stem rust, resistant to Victoria blight, but moderately susceptible to smut.

This variety is widely grown in Alberta and to some extent in Saskatchewan.

#### **ABEGWEIT**

Abegweit resulted from a cross between Vanguard and Erban made at the Central Experimental Farm, Ottawa. It was first distributed in Eastern Canada in 1947.

Abegweit is a medium early maturing variety with straw of medium length and strength. It has medium-sized white kernels with medium hull percentage and average bushel weight. Abegweit is resistant to Victoria blight, semi-resistant to Halo blight, and moderately susceptible to smut. It is resistant to most races of stem rust and some races of crown and leaf rust.

Abegweit is adapted to areas of the Maritime Provinces. It has, however, been grown quite successfully in the Peace River area of Alberta.

#### **FORTUNE**

Fortune was developed at the University of Saskatchewan from the double cross Victory (Victoria x Richland) x (Markton x Victory). It was licensed in 1948.

Fortune is a little earlier maturing and taller and stronger in the straw than Exeter, with a lower hull percentage and slightly smaller kernel. It is susceptible to crown rust but has a great deal of resistance to stem rust. Fortune is highly resistant to Victoria blight and smut. It also has the ability to resist sprouting after maturity under wet conditions. Fortune is officially recommended only for certain parts of Saskatchewan.

### MALTING BARLEY VARIETIES

#### O.A.C. 21

O.A.C. 21 was selected from Manchuria by the Ontario Agricultural College. It was first distributed in 1910. It is a rough-awned, 6-rowed barley of medium maturity. It yields well although the heads break off rather badly when ripe. O.A.C. 21 was the standard malting barley for many years but has been replaced with higher yielding varieties.

#### MONTCALM

Montcalm was developed at Macdonald College from a cross (Michigan x Common 6-rowed) x Mandscheuri, in 1918. It was first distributed in 1946. It is similar to O.A.C. 21 but has relatively smooth awns, yields slightly more, and the heads do not break off so readily at harvest time. It appears to be a few days later maturing than O.A.C. 21. Very careful threshing to avoid hulling is necessary with this variety. Montcalm is accepted as being equal to O.A.C. 21 for malting.

#### OLLI

Olli resulted from a selection made by the Central Experimental Farm, Ottawa, from a hybrid introduced from Finland. It is a rough-awned, 6-rowed, early maturing variety and has a rather low yield. Because of early maturity it is widely used in the control of wild oats. It is not adapted to straight combining. It is moderately resistant to stem rust and covered smut but has no resistance to leaf rust. Olli is accepted for malting. It is widely grown in central and northern Alberta and northern Saskatchewan.

#### GARTONS

Gartons originated with the John Gartons Seed Company of England. Little is known of its actual history. In the early 1920's, Gartons No. 68 was grown quite extensively in Manitoba. O.A.C. 21, however, practically displaced it. In 1930 a second quantity of Gartons was obtained from England by a farmer near Portage la Prairie. Selections from this seed were grown widely in Manitoba. In recent years Gartons has been largely replaced by other varieties. No registered stocks are being produced.

Gartons is a 6-rowed, rough-awned, early maturing variety with medium tall, weak straw. Gartons is not equal to O.A.C. 21 for malting purposes and cannot be graded in the two top grades No. 1 and No. 2 C.W. Gartons is quite resistant to stem rust. It has a fairly good bushel weight and produces a good yield when seeded late. It is used in Manitoba in the wild oat control program.



## **PARKLAND**

Parkland was developed at the Brandon Experimental Farm from a cross between Br. 1136 and a selection from a cross between Olli and Montcalm.

Parkland is a 6-rowed, semi-smooth-awned malting variety with strong straw of medium length. It matures in about the same time as Montcalm in Manitoba and one or two days later in Saskatchewan and Alberta. As with Montcalm, care should be taken in threshing Parkland. It is a higher yielder than Montcalm. Parkland is resistant to rust including 15B, but susceptible to loose smut and the seedling-infecting smuts. It has wide adaptation, and is expected to replace Montcalm in many areas of Western Canada.

## **FEED BARLEY VARIETIES**

### **TITAN**

Titan was produced at the University of Alberta from a cross Trebi x Glabron. It was first distributed in 1943. It is a medium early, smooth-awned, 6-rowed variety with high resistance to lodging. Titan is resistant to covered and false loose smut and some races of true loose smut, but is susceptible to rusts. It is suitable for straight combining. Titan is not widely grown as the awns are so persistent as to make it difficult to thresh.

### **VANTMORE**

Vantmore was developed at the Experimental Station at Brandon, Manitoba from a cross between Titan and Vantage. It was licensed for sale in Canada in 1954.

Vantmore is a high yielding, 6-rowed, smooth-awned variety with strong straw of medium length. It is medium late to late in maturity. Vantmore is not accepted for malting purposes. It is resistant to stem rust but susceptible to leaf rust. It has some resistance to loose smut and covered smut but can be badly damaged by net blotch and certain other leaf spotting diseases. The limited information available indicates that it is best adapted to the black soil zones in Manitoba and eastern Saskatchewan.

### **HUSKY**

Husky barley was produced at the University of Saskatchewan from a cross ( (Peatland x Regal) x O.A.C. 21) x Newal. It is a high yielding, 6-rowed, smooth-awned feed barley with yellow kernels. Husky is resistant to stem rust but moderately susceptible to leaf rust. It is moderately resistant to covered smut but susceptible to loose smut. Husky has strong straw of average length and has a wide adaptability to different soil and climatic conditions.

### **TRAILL**

Trail is a rough-awned, yellow aleuroned, 6-rowed barley selected from the cross Titan x Kindred. It was developed at the North Dakota Experiment Station and was licensed for sale in Canada in 1957.

Trail is resistant to the presently known forms of stem rust, but moderately susceptible to smut and to certain of the common and destructive leaf-spotting diseases of barley. It has medium long,

strong straw. Traill has about the same maturity range as Montcalm. It has yielded well in the black soil zones of Manitoba. In kernel characteristics it cannot be distinguished from Kindred. In Canada, Traill will be rated as a feed barley. It will not be eligible for the malting grades.

#### **WOLFE**

Wolfe was developed at the Experimental Farm, Lacombe, Alberta, although the original cross was made at Ottawa. It has Sanalta, Titan, Montcalm and Olli as parents. It was licensed for sale in 1954.

Wolfe is a 6-rowed, smooth-awned variety with strong straw of short to medium length. It has outyielded Olli in central Alberta. It is a feed barley. Wolfe is quite susceptible to the current races of smuts as well as certain other barley diseases.

Wolfe is recommended for central Alberta.

#### **GATEWAY**

Gateway was developed at the University of Alberta, Edmonton, by crossing Olli with a selection from a cross between Newal and Olli. It was licensed for sale in 1950.

Gateway is a very early maturing variety with short to medium straw of moderate strength. The kernel is long and has fair bushel weight. This variety has little resistance to leaf or stem rust and is moderately susceptible to loose smut, false loose smut and covered smut.

Gateway seems to be particularly well suited to the black and grey-wooded soils of Alberta.

#### **HARLAN**

Harlan was developed at the U.S.D.A. sub-station, Aberdeen, Idaho, from a composite cross. It was introduced into Canada in 1945 by the Experimental Station at Swift Current, Saskatchewan.

Harlan is a medium early, 6-rowed, rough-awned feed barley variety with medium short straw. It has a long kernel of good bushel weight. It is resistant to lodging and used widely under irrigation. Harlan is susceptible to leaf rust, stem rust, loose smut, stripe and Bacterial blight. It is resistant to covered and false loose smut.

Harlan is particularly well adapted to the irrigated areas of southern Alberta and Saskatchewan.

#### **HERTA**

This variety originated in Sweden. It was licensed for sale in Canada in 1956.

Herta is a rough-awned, 2-rowed barley. It is medium late in maturity. In the Prairie Provinces it matures about two days later than Montcalm. Herta has medium long straw which is quite strong. It has good bushel weight, and outyields other 2-rowed barley varieties. Herta is strictly a feed barley. It is not eligible

for the malting grades. Herta, owing to its strong straw, may have an important place on summerfallow land, where lodging is likely to occur.

#### SWAN

Swan was developed at the University of Manitoba from crossing Newal, Peatland and Montcalm. It was licensed in 1957.

Swan is a smooth-awned, 6-rowed feed barley that has yielded exceptionally well in the black soil zones of Manitoba. It is highly resistant to stem rust, moderately resistant to covered smut, false loose smut and to spot blotch and net blotch, but susceptible to true loose smut. Swan has good lodging resistance. It is fairly resistant to straw breaking and shattering. Swan is a feed barley. It is not eligible for the malting barley grades.

### MILLING BARLEY VARIETIES

#### HANNCHEN

Hannchen was selected from Hanna by the Plant Breeding Station, Svalof, Sweden. It was first introduced about 1908. It was re-selected by the University of Saskatchewan. Hannchen is a rough-awned, 2-rowed, late-maturing variety, which has short weak straw. It is reasonably satisfactory for straight combining. Hannchen is susceptible to both stem and leaf rust, and to loose and covered smut. It is eligible for the top 2-row grades. Hannchen has a place in localized areas because it produces fairly good yields of a high quality barley that is suitable for feed or the pearling trade.

#### COMPANA

Compana was selected from a composite cross made by the U.S.D.A., Aberdeen, Idaho. It is a smooth-awned, 2-rowed, early maturing variety. It has short weak straw, but is reasonably satisfactory for straight combining. Compana is particularly adapted to the drier areas. It is susceptible to both stem and leaf rust and to loose and covered smut. Because of its large plump kernel and shallow crease Compana is popular as a pearling barley. It is not a malting barley.

#### VANTAGE

Vantage was developed from a cross between Plush and a selection from a cross of Newal and Peatland made at the Experimental Farm, Brandon, Manitoba. It was first licensed and distributed to growers in 1947. Vantage is a feed barley. It is not accepted for malting. Vantage is a smooth-awned, six-rowed barley with fairly strong straw, and medium to late maturity. The kernel is plump with a white aleurone. Because of its strong straw and non-shattering properties, Vantage is considered a fairly good barley for straight combining. It is resistant to stem rust, susceptible to leaf rust, loose and covered smut, and very susceptible to the leaf blotch diseases. Vantage is grown to a limited extent in Western Manitoba and Eastern Saskatchewan. The variety Vantmore, because of better disease resistance, is expected to replace Vantage in Manitoba.

## FLAX VARIETIES

- REDWING** Redwing was selected by the Minnesota Agricultural Experiment Station from seed of flax obtained by the U.S.D.A. from Russia in 1904. It was first distributed in Canada in 1932. Redwing is resistant to wilt, but susceptible to rust and Pasmo. It has blue flowers and small brown seeds. The straw is long and strong. Redwing is widely grown in areas where early maturity is an important factor. It has the ability to yield well when grown in the northern areas of the Prairie Provinces.
- REDWOOD** Redwood was produced from the cross C.I.980 x Redson by the University of Minnesota and the U.S.D.A. It was first distributed in 1951. Redwood is a high-yielding, medium-late maturing variety, with straw of good length and strength. It is highly resistant to wilt and rust, fairly tolerant to Pasmo, and ripens uniformly. The oil content is exceptionally high and of excellent quality. Owing to its late maturity Redwood is recommended for growing in the southern parts of the Prairie Provinces.
- ROCKET** Rocket is the result of the cross (Argentine 8C x Redwing) made by the Cereal Division, Experimental Farm, Ottawa. It was first distributed in 1947. Rocket is a high-yielding, medium late variety. It is resistant to rust, moderately resistant to wilt, and highly susceptible to pasmo. It is resistant to lodging and ripens uniformly. The oil content is high and iodine value medium high. It is generally recommended for the southern districts of Manitoba and Saskatchewan.
- MARINE** Marine was developed at the North Dakota Experiment Station from the cross C.I. 975 x Sheyenne. It was licensed for sale in Canada in 1952. Marine is a high-yielding, early-maturing variety, with straw of good length and strength. It is resistant to wilt and rust. Although Marine has more tolerance to the Pasmo disease than most flax varieties it is classed as only moderately resistant to pasmo. Marine, unlike many other flax varieties, has the ability to produce high yields when sown late. It will probably replace Sheyenne, especially in Manitoba.
- NORLAND** Norland was developed at the North Dakota Experiment Station from a selection from Victory. It is highly resistant to wilt and to rust but is susceptible to pasmo. It is a medium late variety with strong straw of good length. It matures more uniformly than the original variety. The oil content is high and of good quality.
- SHEYENNE** This variety was produced by the North Dakota Experiment Station. It was licensed for distribution in Canada in 1947. Sheyenne is early in maturity. It has strong straw of medium length. The seed is small, lighter brown than Redwing, rather low in oil content but producing oil of good quality. Sheyenne is resistant to wilt and to rust, and moderately tolerant to pasmo.



## **RAJA**

Raja was developed at the Central Experimental Farm, Ottawa. It was produced by crossing a selection from a cross between Argentine Ma and Fb with a selection from a cross between 1025 and J.W.S. 153B9. It was licensed in 1953.

Raja is an early maturing variety that yields best when seeded late. It is the highest yielder of the early maturing varieties. The flowers are blue, the seeds large and brown. Raja is resistant to rust and wilt but susceptible to pasmo. The oil content and iodine number are about average. Raja has done well under warm conditions and will likely find a place in the southern parts of the prairie provinces. It does not do well under cool conditions.

## **VARIETIES OF SPECIAL CROPS**

**CROWN MILLET:** Crown Millet was developed at the Central Experimental Farm, Ottawa. It is a Proso-type millet with hairy stems and a spreading panicle. The seeds are large and pearl-grey in color. Crown Millet is useful as a late-sown catch crop, a soiling crop to be fed fresh, or harvested for feed. In dry years, Crown Millet can be used in place of oats or barley. The grain has about the same feeding value as barley.

**SIBERIAN MILLET:** Siberian Millet was introduced from Russia. It is a Foxtail-type millet with smooth stems and foxtail-type of head. It makes a better hay than Crown Millet. The seeds are small and orange and yellow in color. Siberian Millet is less palatable than Crown Millet, and has only about 85 per cent of the feed value of barley. Siberian Millet can be used as a late-sown catch crop, for green feed and as a soiling crop cut and fed fresh.

## **VARIETIES OF GRASSES**

**SUMMIT CRESTED WHEAT:** Summit Crested Wheat was developed at the Dominion Forage Crops Laboratory, Saskatoon, Saskatchewan. It was first released to growers in 1953. Summit crested wheat grows about four inches taller than Fairway and usually produces about 10% more forage per acre. It does not crowd out alfalfa in mixtures as does the Fairway variety. On limited trials it appears to produce slightly less seed per acre than Fairway. It is a drought-resistant bunch grass with slightly creeping root habit. It provides early spring and late fall pasture and should be cut for hay at the early heading stage. It makes a good farm lawn grass and because of its extensive root system is valuable in soil conservation.

**PARKLAND BROME:** Parkland Brome was selected by the University of Saskatchewan. It is a long-lived, fine-leaved and fine-stemmed perennial grass with slightly creeping roots. It is moderately drought resistant and frost hardy. Parkland Brome is a valuable hay and pasture plant.

**CREEPING RED FESCUE:** Creeping Red Fescue was selected at the Olds School of Agriculture from strains originally introduced by the Canada Department of Agriculture from Czechoslovakia in 1931. It was released to farmers about 1938. It is a long-lived, short-growing perennial grass with creeping roots and narrow folded leaves. It is not drought resistant but is hardy. Creeping Red Fescue is excellent for pasture and lawns but its low-growing leaves make it less desirable for hay purposes. It is excellent for restoring fibre in the soil.

**LADAK ALFALFA:** Ladak was introduced from India by the U.S. Department of Agriculture. It was first introduced into Canada by the University of Saskatchewan. Ladak is a leafy, long-lived, perennial legume; hardy, drought resistant and moderately wilt resistant. It yields a heavy first cut of hay but is slow to recover after cutting. It is widely adapted but particularly suitable for the drier areas.

**ALSIKE CLOVER:** Alsike was introduced from Europe by early settlers. It is a low-growing, branched, perennial legume, valuable in hay mixtures. It favors moist soils and withstands flooding. It is tolerant to both alkaline and acid conditions to a greater extent than most clovers. It is winter-hardy where moisture is fairly abundant. It is useful as a pasture plant, hay plant, or for seed production or soil building.

**RED CLOVER (Altaswede):** Altaswede Clover was produced at the University of Alberta out of a selection from a Swedish Red Clover. It is classed as a short-lived perennial but persists for several years under favorable conditions. Compared to Alsike clover, Altaswede is taller growing and has slightly coarser stems and branches. It requires a fair amount of moisture. Altaswede is valuable as a hay and pasture crop, for seed production or as a soil builder.

**VERNAL ALFALFA:** Vernal Alfalfa was developed at the University of Wisconsin, and was first distributed in 1953. Vernal is a leafy, long-lived perennial legume. It is hardy, reasonably drought-resistant and unlike most of our older varieties of alfalfa has a high wilt tolerance. Vernal has mixed flower color with lemon yellow flowers predominating. Unlike Ladak, Vernal recovers rapidly after the first cutting. It is likely to replace both Ladak and Grimm in Western Canada.

**ARCTIC SWEET CLOVER:** Arctic Sweet Clover was selected by the University of Saskatchewan from stocks introduced from Siberia. It is a tall, high-yielding, white-blossomed biennial clover. Arctic is hardy, is finer stemmed and more leafy than the common type, and is drought resistant. It is a valuable plant for hay and pasture and a good soil builder.

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## "SERVING PRAIRIE AGRICULTURE"

1. **Information Bureau:** On practical and technical problems facing prairie agriculture.
  2. **Agricultural Publications:** Free distribution of bulletins, etc. to farmers and rural schools.
  3. **Seed Testing Service:** Farmers' seed samples tested for: Germination, Smut, Seed-borne diseases and Weed Seeds.
  4. **Weed Identification Service:** Prompt identification of new and unknown weeds.
  5. **Seedtime and Harvest:** Timely agricultural hints published in rural newspapers.
  6. **Variety and Plant Disease Surveys.**
  7. **Field Crop Variety Plots:** Demonstration plots.
  8. **Agricultural Exhibits:** Providing up-to-date information on current agricultural problems.
  9. **Distribution of Registered and Certified Seed:** Assisting Crop Improvement Associations.
  10. **4-H Clubs:** Assisting and encouraging Junior Farm Club work, particularly 4-H Grain Clubs in Western Canada.
  11. **Newly-Established Veterans:** Providing practical and technical information on farm problems.
  12. **Agricultural Scholarships and Research Assistance:** Providing bursaries for agricultural students and grants in aid of agricultural research.
  13. **Mobile Public Address Unit:** Serving Agricultural Societies and Fairs.
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